Internal

EXECUTIVE SUMMARY

Date Summary Prepared: May 22, 2012

Mine Name: Bonneville Borrow	**I.D. Number:** M/035/0046
Operator: Kennecott Utah Copper LLC	**Date Original Notice Received:** 11/29/2011
Address: 4700 Daybreak Parkway	**County:** Salt Lake County
South Jordan, Utah 84095	**New/Existing:** New large mine on the site of existing sand and gravel operation
Contact Person: Kelly D. Sanders	**Mineral Ownership:** FEE Kennecott Utah Copper, LLC
Permit Contact Person: Glenn Eurick	**Surface Ownership:** FEE Kennecott Utah Copper, LLC
Telephone: 801-204-2885	**Lease No.(s):** NA

Life of Mine: Phased approach; current mining activity to be confined to 118 acres. Future Mining phases may extend the life of mine 10 years or more.

Legal Description: Portions of Section 31, Township 1 South, Range 2 West, and portions of Sections 25 and 36, Township 1 South, Range 3 West, SLBM.

Mineral(s) to be Mined: Pit run and crushed and/or screened aggregate for construction, including bedrock quartzite deposits.

Acres to be Disturbed: 134 acres over the life of the mine.

Present Land Use: Mining of sand and gravel and wildlife habitat, with historic livestock grazing.

Postmining Land Use: Wildlife habitat.

Variances from Reclamation Standards (Rule R647) Granted: None.

Soils and Geology

Soil Description: The soils in all test pits appeared relatively homogenous from the surface to a depth of 12 inches. Soil samples identified by USDA, NRCS indicate two soil types as Stony Terrace Escarpments and Kearns silt loam. The upper silt loam of both soils types varies from 0 to 24 inches in thickness and will be salvaged for topsoil. The middle horizon of both soil types is silt clay loam varying from 24 to 42 inches in thickness. This material will be stored as overburden. The lowest soil horizon of both soil types is a gravelly loam.

pH: The soil pH ranges from 5.8 to 9.1.

Special Handling Problems: Depth of soil is variable from bedrock to sideslopes, making soil salvage locally be difficult.

Geology Description: The majority of the Bonneville Borrow area is composed of Quaternary alluvial and fan deposits, consisting of poorly to moderately sorted clay to boulder size sediments deposited in the past by debris flow, floods and streams. The bed rock is composed of Pennsylvanian-Permian quartzitic sandstones and quartizite of the Oquirrh Group that is moderately dipping from 30 to 45 degrees to the north-northeast and varies locally with a dip of 25 degrees to the northwest.

Hydrology

Ground Water Description: Groundwater is estimated to be at 4,070 feet, and the quarry floor will be about 4,800 in elevation. There is about 730 feet in vertical separation.

Surface Water Description: There are no perennial streams or intermittent waters and no defined channels in the Bonneville Borrow area. Any precipitation which enters the borrow area(s) will be contained within the borrow area. All diversions and ponds were appropriately sized to handle the contributing watersheds and storm events. The project is constructed below grade, keeping all disturbed area drainage from leaving the site. Best management practices and concurrent reclamation activities will be implemented during the life of the mine operations to ensure protection of surface water resources. Two clean water diversions and sumps will be built to manage surface water runoff at the site during mining and were sized to settle eroded sediment transported from stormwater runoff during grading. A SWPPP was also submitted with the permit.

Water Monitoring Plan: An analytical water monitoring program is not required, but a visual monitoring program will be implemented.

Ecology

Vegetation Type(s); Dominant Species: The site is primarily grassland that was revegetated as part of previous flood control work. The following four vegetation communities were identified: weed, grassland, low shrub, and tall shrub. The weed area is dominated by cheatgrass (*Bromus tectorum*), common ragweed (*Ambrosia artemisiifolia*), and field pennycress (*Thlaspi arvense*). The grassland areas are dominated by cheatgrass (*Bromus tectorum*), common ragweed (*Ambrosia artemisiifolia*), Basin wildrye (*Leymus cinereus*), and Kentucky bluegrass (*Poa pratensis*). Low shrub areas are dominated by rabbitbrush (*Chrysothamnus nauseosus*), big sagebrush (*Artemisia tridentata*), and shadscale (*Atriplex confertifolia*). Tall shrub areas are dominated by Russian olive (*Elaeagnus angustifolia*) and Gambel oak (*Quercus gambelii*) with a grass understory. There are some non-native species such as cheat grass (*Bromus tectorum*), common ragweed (*Ambrosia artemisiifolia*), curly dock (*Rumex crispus*), field pennycress (*Thlaspi arvense*), salt cedar (*Tamarix* sp.), Canada thistle (*Cirsium arvense*), and whitetop (*Cardaria draba).* The site exhibits a highly diverse vegetation population.

Percent Surrounding Vegetative Cover: 83.5%.

Wildlife Concerns: There are five federally protected species with the potential to occur or be affected by projects within Salt Lake County, Utah. No individuals or potential habitats of any of the listed species were identified during fieldwork.

Surface Facilities: Surface facilities will include water retention ponds and a crushing and screening plant. The mining areas include soil stockpiles, temporary stockpiles, access roads, and various runoff control facilities.

Mining and Reclamation Plan Summary:

During Operations: Soil will be stockpiled on site. The alluvial and rock material will be crushed and screened, then hauled off site for use as engineered materials. There will be no discharge from the water retention pond. Sediment controls will be used in remote areas. Air quality will be protected in accordance with conditions set forth by the EPA. Fugitive dust will be controlled through best management practices to include speed control and treatment of roads with water.

After Operations: All structures and facilities will be removed following mining. Facilities will be demolished and, as appropriate, recycled or hauled to a disposal facility. Roads will be left to access the site, but all other mining roads will be reclaimed. All highwalls will be regraded to be less steep than 45 degrees in rock. Alluvial areas will be graded to a slope of 2.5H :1V. The settling ponds will remain in a stable configuration, then the ponds will be topsoiled and reseeded. Following regrading, disturbed areas will be covered with an average of twenty four inches of soil and seeded with a mix that includes both native and introduced species adapted to the area.

Surety

Amount: $5,290,069.00
Form: Not yet submitted
Renewable Term: The surety amount is escalated five years

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